U.S. DEPARTMENT OF ENERGY
SOLAR DECATHLON

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Frequently Asked Questions

What is The Solar Decathlon?

The U.S. Department of Energy Solar Decathlon is an award-winning program that challenges collegiate teams to design, build, and operate solar-powered houses that are cost-effective, energy-efficient, and attractive. The winner of the competition is the team that best blends affordability, consumer appeal, and design excellence with optimal energy production and maximum efficiency.

The competition shows consumers how to save money and energy with affordable clean energy products that are available today. The Solar Decathlon also provides participating students with hands-on experience and unique training that prepares them to enter our nation's clean energy workforce.

The first Solar Decathlon was held in 2002; the competition has since occurred biennially in 2005, 2007, 2009, 2011 and 2013. Open to the public free of charge, visitors can tour the houses, gather ideas to use in their own homes, and learn how energy-saving features can help them save money today.

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What is the Competition?

The U.S. Department of Energy Solar Decathlon is a competition that challenges collegiate teams from around the world to design, build and operate solar-powered houses that are affordable, highly energy efficient, attractive, and easy to live in. These students spend almost two years creating houses to compete in ten contests. Each worth 100 points, the ten contests for Solar Decathlon 2011 were:

- Affordability
- Appliances
- Architecture
- Comfort Zone
- Communications
- Energy Balance
- Engineering
- Home Entertainment
- Hot Water
- Market Appeal

Details on each of the contests can be found here:
www.solardecathlon.gov/contests.html

The team with the most points at the end of the competition wins. The winning team produces a house that:

- Is cost-effective, attractive, and easy to live in
- Maintains comfortable and healthy indoor environmental conditions
- Supplies energy to household appliances for cooking, cleaning and entertainment
- Provides adequate hot water
- Balances energy production and consumption

Details on the rules of the competition can be found here:
www.solardecathlon.gov/rules.html

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History of Solar Decathlon

Since the First Solar Decathlon in 2002, the Event Has:

- Involved 92 collegiate teams, which pursued multidisciplinary course curricula to study the requirements for designing and building energy efficient, solar-powered houses
- Established a worldwide reputation as a successful educational program and workforce development opportunity for thousands of students
- Affected the lives of 15,000 collegiate participants
- Expanded its outreach to middle school students by inviting schools in the Washington, D.C., area to visit on class tours
- Grown to include Solar Decathlon Europe (2009, 2012) and Solar Decathlon China (2013), in addition to the sixth edition of the U.S. Department of Energy Solar Decathlon in 2013

In 2009, the Solar Decathlon:

- Provided 307,502 house visits to the public over 10 days
- Offered 32 workshops onsite for the public and held a dedicated day of workshops for builders and industry, which were attended by over 500 professionals
- Partnered with the National Education Association to broadcast daily educational programming to classrooms around the nation
- Reached millions of readers and viewers in markets across the globe through newspapers, radio, TV, and online coverage

Where are the Past Solar Decathlon Houses? Are They for Sale?

Since 2002, teams have constructed 91 houses for the Solar Decathlon competition. The houses from prior events—now located throughout the United States and around the world—continue to serve numerous education, conservation, and community-oriented functions.

To view an interactive map displaying where the Solar Decathlon houses are now, please visit: www.solardecathlon.gov/where_now.html

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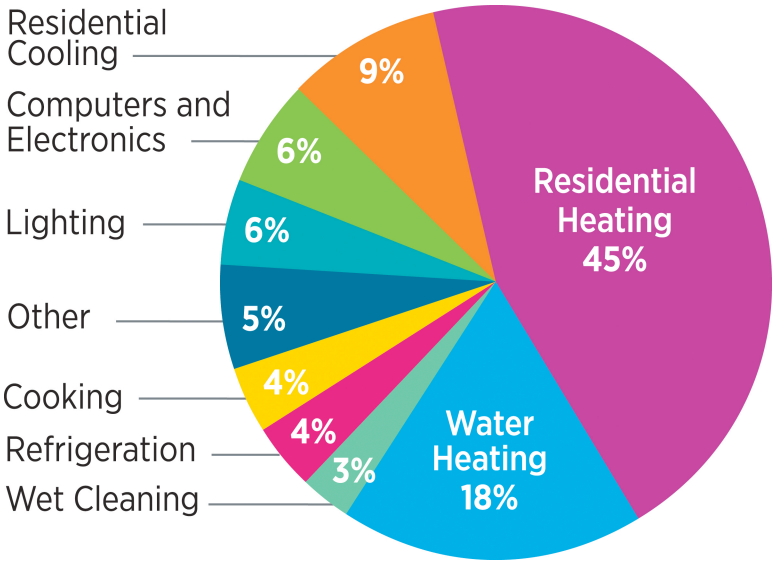
Energy Facts and Figures

Residential energy use



Source: 2010 Building Data Book

5 Tips to Save Money by Saving Energy

1. Set your programmable thermostat
2. Seal your windows, doors, and ducts
3. Look for ENERGY STAR appliances
4. Improve the insulation in your attic and walls
5. Switch to energy-saving lighting

Learn more energy-saving tips at www.energysavers.gov/

Save Energy and Money

"Many American families can take simple steps to reduce their energy bill, while making their homes more comfortable, and use that money for something they really need or want."

- Energy Secretary Steven Chu

The typical U.S. family spends about $2,000 every year on utility bills. In 2010 alone, homeowners spent nearly $250 billion on energy costs. By making quick and affordable changes, Americans can save a few hundred dollars on energy bills.

For instance, using a programmable thermostat can save an average American family more than $100 on heating and cooling bills every year. Or, just by upgrading 15 of the traditional light bulbs in their home to energy-saving light bulbs, Americans can save about $50 per year. And last year alone, consumers saved a total of $18 billion with ENERGY STAR appliances.

Lighting **MYTHS** and **FACTS**

In 2007, President Bush signed into law bipartisan energy legislation to help Americans save money and do more with less energy. As a result, you are seeing a number of new light bulbs at your local store. These bulbs – new energy-saving incandescents, LEDs and CFLs – offer the range of color and features you're accustomed to, yet they use less energy. Let's clear up some misconceptions about these new lighting choices.

MYTH I won't be able to buy incandescent light bulbs next year.

FACT Incandescent light bulbs will still be for sale after the 2012-2014 provisions of the new law take effect. In fact, there are incandescent bulbs on the store shelves today which use about 25% less energy; they meet these new requirements. You'll also be able to continue to purchase 3-way incandescent bulbs and other specialty bulbs.

25% **The energy dollars you'll save with energy-saving incandescents**

MYTH Americans are being forced to buy those curly, blue, fluorescent bulbs.

FACT The curly bulbs – which, by the way, now come in warm and bright white colors – are called Compact Fluorescent Lamps (CFLs), and they are just one of a variety of CFL designs, and just one kind of efficient bulb you can choose from.

75% **The energy dollars you'll save with CFLs**

CFLs are much better than when they were first introduced. You can now find CFLs in a full range of colors, many have covers to give them traditional bulb shapes, they generally ramp up to full brightness faster than before, and some are dimmable.

The big benefit of CFLs: they will save you significant money. Let's say you replace one traditional 100W incandescent bulb, which you run 2 hours each day, with an ENERGY STAR-qualified CFL; you save about $6 each year in energy costs, assuming average electricity rates. In about 6 months, you'll save what the bulb cost you to buy, and it should last about 10 times longer than the old incandescent, so you'll keep saving well into the future.

Save about $50 a year by replacing 15 traditional bulbs with a mix of energy-saving bulbs.

You can also choose from a range of energy-saving incandescent bulbs and a rapidly growing selection of LED bulbs (or light-emitting diode – a completely different technology).

LED replacements for traditional 60 watt and 40 watt bulbs are already on store shelves, and manufactures are set to release products to replace brighter bulbs in the coming months. ENERGY STAR LEDs should last about 25 times longer than traditional bulbs and they also use 75 to 80% less energy than traditional incandescents. So, as with CFLs, you'll see immediate savings in energy costs. While LED prices are still high, they're expected to drop over time – just as with flat panel TVs and other electronics. Yet even at current prices, the energy savings will typically cover the bulb cost years before you have to think about replacing those bulbs again.

75%+ **The energy dollars you'll save with LEDs**

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For more information visit energysavers.gov/lighting

MYTH CFLs are harmful.

FACT CFLs contain a small amount of mercury – much less than the 4 foot fluorescent tube lights most of us have been using for decades in our homes and offices and about 100 times less than the old thermometers. In the big picture, CFLs actually reduce the total amount of lighting-related mercury entering the environment: because CFLs need less energy, electric utilities can burn less coal and emit less mercury. If you aren't comfortable with CFLs, you have other choices.

MYTH These lighting standards will hurt the U.S. economy.

FACT Standards like this one can help America remain competitive economically. You would save about $50 a year by replacing 15 traditional bulbs with a mix of energy-saving bulbs. And those savings really add up: As a country, we'd save about $6 billion a year. That money can be saved or invested in other productive ways, not wasted on energy. Today, you are already saving on energy costs thanks to similar national standards for refrigerators – and the innovation those standards inspired. Compared to refrigerators of the 1970s, today's refrigerators save the nation about $20 billion per year in energy costs, or $150 per year for the average family.

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By requiring a single national lighting standard, Congress also helped businesses avoid wasting time and money to meet a patchwork of different state standards. Individual rules for energy-savings products in each of the 50 states would be one of the least efficient business environments for the manufacturing industry.

Finally, the lighting standard should help American innovators and companies with manufacturing in the U.S. sharpen their edge in the global marketplace. Countries around the world are looking for ways to maintain or improve their citizens' standard of living with less energy, and many have adopted standards which drive markets for efficient lighting. American and international firms are presently developing new products and manufacturing LED lighting parts and products here in the U.S., and thanks in part to the clear signal Congress sent with the new lighting standards, the outlook is strong for innovation and growth in the U.S. and global LED market.

Lighting Choices **SAVE YOU MONEY**

All of these light bulbs meet the new energy standards that take effect from 2012-2014.